

CLAIMS

1. A touch screen control system comprising a touch screen having first and second conductive layers arranged to be brought together by touching of the screen, and a detection system arranged to detect a contact position at which the screen is touched by monitoring electrical signals from at least one of the layers, wherein the system further comprises an antenna, and the detection system includes a proximity sensing signal generator arranged to generate a proximity sensing signal to be transmitted between the antenna and the first layer via a user of the system, and the detection system is further arranged to receive the transmitted proximity sensing signal and determine therefrom the distance between a part of the user and the touch screen.
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2. A system according to claim 1, wherein the first layer has two contact elements extending along opposite sides thereof.
3. A system according to claim 2, wherein the detection system is arranged to connect the contact elements to different potentials so that the potential of the layer varies with the distance from each of the two contact elements thereby to enable sensing of the contact position.
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4. A system according to any foregoing claim, wherein the detection system is arranged to transmit the proximity sensing signal from the antenna to the first layer.
- 20 5. A system according to 4 when dependent on claim 2 or claim 3, wherein the detection system is arranged to receive the proximity sensing signal via at least one of the contact elements.

6. A system according to claim 5, wherein the detection system is arranged to receive the proximity sensing signal via both of the contact elements.
7. A system according to claim 6, wherein the detection system includes a summing device arranged to sum signals from the two contact elements to produce a received proximity sensing signal.
8. A system according to any of claims 4 to 7, wherein the detection system is arranged to control at least one connection to the second layer such that the second layer acts as a shield for at least part of the time when the proximity sensing signal is being received.
- 10 9. A system according to claim 8, wherein the detection system is arranged to determine when the touch screen is being touched, and to control said at least one connection to connect the second layer to at least one fixed potential when the proximity sensing signal is being received and the touch screen is not being touched.
- 15 10. A system according to claim 9, wherein said at least one connection comprises two connections arranged to connect the second layer between two different potentials, both when the proximity sensing signal is being received and the touch screen is not being touched, and when the detection system is determining the contact position.
- 20 11. A system according to claim 9 or claim 10, wherein the detection system is arranged to electrically isolate the second layer when the proximity sensing signal is being received and the touch screen is being touched.
12. A system according to any foregoing claim, wherein the detection system is arranged to alternate between a touch position sensing mode, in which it is

arranged to determine the contact position, and a proximity sensing mode, in which it is arranged to measure said distance.

13. A system according to any foregoing claim, wherein the detection system comprises a touch screen controller arranged to detect the contact position, and a proximity sensing system including the proximity sensing signal generator.
14. A system according to claim 13, wherein the touch screen controller is arranged to receive said electrical signals, including the proximity sensing signal from the touch screen, and the proximity sensing system is arranged to receive the proximity sensing signal from the touch screen controller.
15. A system according to claim 14, wherein the touch screen controller is arranged to send a synchronisation signal to the proximity sensing system to enable the proximity sensing system to determine when it is receiving the proximity sensing signal from the touch screen controller.
16. A system according to claim 15, wherein the touch screen controller is arranged to transmit the synchronisation signal to the proximity sensing system on the same connection as the proximity sensing signal.
17. A system according to any foregoing claim, further comprising a filtering capacitor arranged to be connected between one of the layers and ground during determination of the contact position, but disconnected during measurement of said distance.
18. A touch screen control system comprising a touch screen having first and second conductive layers arranged to be brought together by touching of the screen, and a detection system arranged to detect a contact position at which the screen is touched by monitoring electrical signals from at least one of the layers, wherein the

first layer is arranged to act as a receiving antenna to receive a proximity sensing signal transmitted from a transmitting antenna via a user, and the detection system is further arranged to transmit the received proximity sensing signal on to a proximity sensing system thereby to enable the proximity sensing system to 5 determine a distance between a part of the user and the touch screen.

19. A touch screen control system substantially as hereinbefore described with reference to the accompanying drawings.